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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte E. WILLIS LACY, SAMUEL S. WAGGENER,
MAURICE E. GRUDZA, DAVID C. JANN,
and COLIN FORSYTH

Appeal 2008-2079
Application 10/677,649
Technology Center 3600

Decided: October 22, 2008

Before MURRIEL E. CRAWFORD, ANTON W. FETTING, and MICHAEL W. O'NEILL, *Administrative Patent Judges*.

O'NEILL, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

E. Willis Lacy, et al. (Appellants) seek our review under 35 U.S.C. § 134 of the final rejection of claims 1-4, 19, and 20. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We AFFIRM.[1]

THE INVENTION

The claimed invention relates to an ordnance device for launching failure prone fragments. (Specification 1:13-14.)

Claim 1, reproduced below, is representative of the subject matter on appeal.

> 1. An ordnance device comprising:
>
> (a) an explosive charge;
>
> (b) a fragment layer including a plurality of preformed failure prone fragments;
>
> (c) a metal buffer element disposed between said explosive charge and said fragment layer, said metal buffer element configured to attenuate an incident shock communicated into said fragment layer after detonation of said explosive charge, said preformed failure prone fragments of said fragment layer being arranged in a continuous fashion along said buffer element; and
>
> (d) a wrap element having a first layer and a second layer, said first layer disposed between said second layer and said fragment layer opposite of said buffer element, said first layer composed of a compressible foam material of lower density than said second layer, said second layer configured to communicate a shock into said fragment layer to further attenuate said incident shock.

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[1] Our decision will make reference to Appellants' Appeal Brief ("App. Br.," filed Oct. 25, 2006), Reply Brief ("Reply Br.," filed March 14, 2007), and the Examiner's Answer ("Answer," mailed Jan. 18, 2007).

THE PRIOR ART

The Examiner relies upon the following as evidence of unpatentability:

Purcell	US 4,492,166	Jan. 8, 1985
Bender	US 4,982,668	Jan. 8, 1991

THE REJECTION

The following rejection is before us for review:

Claims 1-4, 19, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Purcell and Bender.

ISSUES

The issue before us is whether the Appellants have shown that the Examiner erred in rejecting claims 1-4, 19 and 20 as being unpatentable over Purcell and Bender. This issue turns on whether the Appellants have persuaded us of an error in the Examiner's prima facie case of obviousness with the contentions:[2]

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[2] Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

Bender teaches away because Bender teaches an exterior fragmentation plate (see App. Br. 9);

Neither Purcell nor Bender describes a two-layer wrap element where the second layer's density is greater than the first layer's foam material density (see App. Br. 9);

The combination of Purcell and Bender is incapable of attenuating the incident shock (see App. Br. 9);

Purcell teaches away from the purpose for the wrap element (see App. Br. 10);

The combination of Purcell and Bender yields no expectation of the claimed features (see App. Br. 10);

The Examiner's motivation is conclusionary (see App. Br. 10);

The claims are distinguishable based on their claimed features (see App. Br. 10);

Bender's metal sheets are incapable of attenuating shock because they provide containment (see Reply Br. 2); and

There is no incentive to attenuate shock in Purcell (see Reply Br. 2).

FINDINGS OF FACT

We find that the following enumerated findings of fact are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Purcell describes an ordnance device. The device has an explosive charge 30. The device has a fragment case (layer) 28. As shown in Figure 3, the fragment layer includes a plurality of scores. These scores divide the layer into a plurality of preformed failure prone fragments because each serration is an area prone to failure before the areas that are not serrated. As also shown in Figure 3, these preformed failure prone fragments surround in a continuous fashion the charge 30. The ordnance device has a space between fragment layer 28 and metallic shell 2 (the second layer of a wrap element) filled with polyurethane foam 4 (the first layer of a wrap element) that forms the attenuator. (Purcell, col. 3, ll. 49-57 and Fig. 3.) As such, the first layer is disposed between the second layer and fragment layer.
2. The metallic shell 2 (second layer) would inherently have a greater density than the polyurethane foam attenuation layer 4 (first layer) because metal is denser than polyurethane foam. In other words, the first layer (foam 4) is of lower density than the second layer (shell 2)
3. Bender describes a fragmentation plate. The plate consists of two parts. The first part is a sheet metal shell 2. The second part is a plurality of fragmentation elements 1 (a fragment layer). The sheet metal shell is disposed between the explosive charge and the fragment layer. (Bender, col. 1, ll. 61-66.) As shown in Figures 2A-D, when the fragmentation layer is composed of fragmentation elements that have planar side faces 5 a nonperforated sheet metal shell 2' is used. (Bender, col. 3, ll. 10-13.) Thus, Bender describes a metal buffer element (sheet metal shell 2 or 2') disposed between the explosive

charge and fragment layer. In addition, because Bender describes the fragmentation elements 1 having planar side faces 5, the elements will abut together along the planar side faces. Thus, Bender describes the fragment layer being arranged in a continuous fashion. Because the fragmentation elements rest on the metal sheet (the metal buffer element), the elements are arranged along the buffer element.

PRINCIPLES OF LAW

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, and (3) the level of skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S.Ct. at 1734 ("While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.") The Court in *Graham* further noted that evidence of secondary considerations "might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." 383 U.S. at 17-18.

ANALYSIS

The Appellants argue claims 1-4, 19, and 20 as a group. We select claim 1 as representative of the group. Claims 2-4, 19, and 20 will stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

We have found that Purcell describes the claimed subject matter of claim 1 with respect to the explosive charge, fragment layer, and wrap element having two layers with different densities. (Facts 1 and 2.) We have also found that Bender describes the claimed subject matter of claim 1 with respect to the metal buffer element, its disposition between the charge and fragment layer, and the arrangement of the fragment layer along the buffer element. (Fact 3.) Having found all of the claimed subject matter of claim 1 within the combination of Purcell and Bender, we determine that the difference between the claimed subject matter and the combination of Purcell and Bender is that the claimed subject matter combines elements separately found in Purcell and Bender. As such, the claim is combining familiar elements (explosive charge, fragment layer, buffer element, and wrap element) in the prior art (Purcell and Bender) according to known methods of fabricating such familiar elements. We do not see anything unpredictable from the result of combining Purcell and Bender nor have the Appellants come forth with evidence of unpredictability by combining these familiar elements found within the Purcell and Bender. Accordingly, "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, 127 S. Ct. at 1739.

Concluding a prima facie case of obviousness is established by the combination of Purcell and Bender, we turn now to the Appellants' arguments against the prima facie case of obviousness.

We are not persuaded by the Appellants' argument that the Examiner erred in rejecting the claims as obvious over the combination of Purcell and Bender because, as alleged by the Appellants, Bender teaches an exterior fragmentation plate. The facts dictate that metal sheet 2' is disposed between the charge and the fragment layer 1. (Fact 3.) Therefore, Bender does not teach away as the Appellant argues.

Additionally, we are not persuaded by the Appellants' argument that neither Purcell nor Bender describes a two layer wrap element where the second layer's density is greater than the first layer's foam material density. The facts dictate Purcell describes a wrap element where the first layer's 4 density is lower than the second layer's 2 density. (Fact 2.)

We are not persuaded by the Appellants' argument that the combination is incapable of attenuating incident shock or could not meet the claimed capabilities. The Appellants have not come forth with evidence that the combination of Purcell and Bender described elements (see facts 1-3) are incapable of attenuating the incident shock and unable to meet the claimed features. At the point where the Examiner made the prima facie case, the burden shifted to the Appellants to show that the prior art structure did not inherently possess the functionally defined limitations of the claimed apparatus. *See, e.g., In re Spada* , 911 F.2d 705, 708 (Fed. Cir. 1990). This would require the Appellants to come forth with evidence to show the combination of Purcell and Bender would not inherently possess the capability to attenuate the incident shock. Instead, the Appellants have argued the combination is incapable of attenuating the incident shock. Appellants' attorney's arguments in a brief do not take the place of evidence in the record. *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974); *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984); *Meitzner v. Mindick*, 549 F.2d 775 (CCPA 1977), *cert. denied*, 434 US 854 (1977), and *In re Schulze*, 346 F.2d 600, 602 (1965). Moreover, although, Appellants may use functional language as a format for the claim to make clear the boundaries of the subject matter for which protection is sought, functional language, per se, does not confer patentability to a claimed apparatus if the prior art discloses a structure having the capability of functioning in the same manner claimed. *See In re Schreiber,* 128 F.3d 1473, 1477-78 (Fed. Cir. 1997).

We are not persuaded by the Appellants' argument that Purcell teaches away from the purpose of the claimed wrap element. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference would be led in a direction divergent from the path that was taken by the applicant." *In re Haruna*, 249 F.3d 1327, 1335 (Fed. Cir. 2001). In our view, Purcell's disclosure does not discourage and would not have led one of ordinary skill in the art away from a wrap element having two layers with different densities. In fact, the wrap element in Purcell has the claimed features of two layers with different densities, (see facts 1 and 2).

We are not persuaded by the Appellants' argument that the combination of Purcell and Bender yields no expectation of the claimed features. The Appellants need to provide evidence the combination of Purcell and Bender yields no expectation of the claimed features. Instead, the Appellants have just argued any resulting combination of Purcell and Bender yields not expectation of success to achieve the claimed features.

We are not persuaded by the Appellants' argument that the Examiner's motivation to combine is conclusionary. The Examiner stated the reason for combining was to "obtain a device that had more reliable ejection of the fragments as suggested by Bender" (Answer 5). In our view, the Examiner has articulated an apparent reason with a rational underpinning, which is required by the Examiner to conclude that a prima facie case of obviousness exists. *See KSR*, 127 S. Ct. at 1740-41 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")).

We are not persuaded by the Appellants' argument that the claims are distinguishable based on their claimed features. We have reviewed the combination of Purcell and Bender and find the claimed structure (explosive charge, fragment layer, buffer element, and wrap element) expressly described. (Facts 1-3.) With respect to claimed "features" or functionality, once the claimed structure is found, the burden shifts to the Appellants to show that the prior art structure used to reject the claim did not inherently possess the functionally defined limitations of the claimed apparatus. Such a showing requires evidence and explanation why the prior art structure does not inherently possess the characteristics; not just Appellants' attorney's argument as the Appellants have done in this case. Again, Appellants' attorney's arguments in a brief do not take the place of evidence in the record. *In re Pearson*, 494 F.2d at 1405. In our view, the evidence of record clearly describes the claimed structure (explosive charge, fragment layer, buffer element, and wrap element), see facts 1-3, and the Appellants have not met their burden of providing evidence and explanation that the prior structure does not inherently possess the features or functionality recited in the claims.

We are not persuaded by the Appellants' argument that Bender's metal sheets are incapable of attenuating shock. Again, this would require the Appellants to come forth with evidence that Bender's metal sheets are incapable of attenuating shock. Instead, the Appellants have just argued the metal sheets provide containment. Just because the metal sheets provide containment does not necessarily mean these sheets do not also inherently provide attenuation of the shock generated by the explosive charge.

We are not persuaded by the Appellants' argument that there is no incentive to attenuate shock in Purcell. The Appellants allege that because Purcell propels fragments in a specific direction this precludes attenuation. We do not find that because Purcell propels fragments in a specific direction this would preclude any incentive for attenuating the shock. To us, the fact that Purcell is interested in propelling fragments in a specific direction would provide an incentive to attenuate the shock because the shock cause by the explosive charge is a parameter in determining where the fragments would be propelled; and thus, one of ordinary skill in the art would want to have some control over the shock in order to control the specific direction of the fragments as described in Purcell. Attenuation of the shock would provide one of ordinary skill in the art some control over the specific direction the fragments would be propelled. Thus, there is an incentive to attenuate the shock in Purcell and one of ordinary skill in the art could look to Bender to provide an attenuation teaching.

CONCLUSIONS

We concluded that the Appellants have not shown that the Examiner erred in rejecting the claims 1-4, 19, and 20 as being unpatentable over the combination of Purcell and Bender.

DECISION

The Examiner's decision to reject the claims 1-4, 19, and 20 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

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